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## Major concentration of River Warblers *Locustella fluviatilis* wintering in northern Botswana

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The River Warbler *Locustella fluviatilis* is an unobtrusive Palaearctic migrant, which enters northeastern Africa in September/October, but only continues to move through eastern Africa into southern Africa in late November and December (Dowsett 1972). Birds from late December to late January in southern Zambia were still on the move southwards (Dowsett 1972). The wintering\* grounds of the species are still unknown: Zimbabwe and northern South Africa are suggested as the main wintering area (Dowsett 1972, Curry-Lindahl 1981), but there are very few records from these countries. Irwin (1981) mentions 7 scattered records from Zimbabwe and 5 have been accepted more recently (Hustler 1989, Hustler *et al.* 1990, 1991, Hustler pers. comm.). From the Transvaal there is one old specimen and a single accepted record (Tarboton *et al.* 1987), and more recently there are records from two localities, one involving several birds (Tarboton pers. comm., Hockey pers. comm.). There are two records from Botswana: one bird was seen during the 6th Pan-African Ornithological Congress in Francistown in March/April 1985 and a second one was at the same locality on 16 March 1989 (Botswana Bird Club Records Subcommittee pers. comm.). At the time of Dowsett's review there were no records available from February or early March, when River Warblers supposedly undergo a rapid moult at the final non-breeding destination (Dowsett 1972). D. J. Pearson more recently has provided evidence of wintering of River Warblers as far north as Kenya, where four were caught between 6 January and 25 March, three of which were moulting (Turner 1992).

Between 4 and 6 March 1992 River Warblers were found rather plentiful in the understory of the more open parts of the Rhodesian Teak *Baikiaea plurijuga* woodlands in the Kasane Forest Reserve, just

\*The northern hemisphere biased term "wintering" is used in this paper for convenience, but the birds actually spend the local summer in the southern hemisphere.

south of Kasane, northern Botswana (30 minute-square 1725C). The birds were extremely skulking except for a few minutes at sunrise and sunset, when they all suddenly emerged into the top of the *Baphia* and *Bauhinia* scrub, apparently establishing territories by repeating the typical explosive *phit* call. River Warblers were present at a density of 7 birds per hectare near the camp, and twice 3 and once 4 per hectare were found at three other random places in the forest (up to 6 km away from the camp) where I happened to be at dawn or dusk, apparently the only right moment for a representative inventory. It also happened twice at two more sites during the day that two River Warblers started calling in response to a mobbing bird-party (possibly for a snake). Three birds near the camp were located repeatedly and each stayed within the same patch of scrub and long grasses, not moving more than 5 m during three days. When disturbed, the birds dropped to the ground and they were impossible to flush into mistnets. When confronted with a tape of the call, some birds eventually responded with a short burst of the 'squizzling' song. Two birds seen at very close range were in heavy moult, including remiges and rectrices.

Two of the sites in the Kasane Forest Reserve were revisited early in 1993. In the evening of 14 January, 4 River Warblers were located at dusk at the most remote count-point, the same number as in March 1992. The territorial response was poor and only one bird was seen at close range: there was no obvious sign of moult yet. Next evening, no River Warblers could be located near the previous year's camp site, but at this site the understory vegetation had not fully recovered from a fire in the dry season. It is likely that River Warblers were only just arriving in northern Botswana in mid-January 1993.

Although only 25 birds were actually located in the Kasane Forest Reserve, this is more than the total of all records known hitherto from the presumed final wintering grounds. Furthermore, the average density of River Warblers at the 4 random points with a representative count (4 per hectare) indicates that considerable numbers of this species must have wintered in the more open parts of the Teak woodlands, where there is a dense scrub cover interspersed with long grasses (*Hyperthelia dissoluta*, *Triraphis* spp., *Aristida* spp., *Eragrostis* spp.). At this density, River Warblers outnumbered all other species of Palaearctic warblers found in the area during a transect of 20 point-counts covering 35 ha (in 200 minutes): Willow Warbler *Phylloscopus trochilus*, 29 in 17 points=8/10 ha; Whitethroat *Sylvia communis*, 28 in 17 points=8/10 ha; Icterine Warbler *Hippolais icterina*, 19 in 12 points=5/10 ha; European Marsh Warbler *Acrocephalus palustris*, 11 in 7 points=3/10 ha; Garden Warbler *Sylvia borin*, 9 in 6 points=3/10 ha. However, when we consider that the woodlands are probably not ecologically uniform for the different species and that only the points where a species was recorded constitute habitat that warrants to be taken into account for a density calculation, the densities of all five warblers become remarkably similar (9–10 per 10 ha), though still clearly below the density of River Warblers. The only information on densities of River Warblers in southern Africa seems to be Kelsey (1992) who reported 2 birds resident in 8.5 ha in southern Zambia in

January/February, apparently also birds at the final non-breeding destination.

River Warblers were present in the Teak woodlands at a density higher than found for any Palaearctic warbler in any habitat in Botswana (Herremans 1993), but the species was not found during similar bird inventories in several other typical habitats of northern Botswana during February/March 1992: they were absent from the tall and moist grasslands of the Northern Plains (a seasonally inundated basin), from the thickets along the Chobe or Linyanti River-fronts, and from Mopane scrub and woodland in the Chobe district. The species therefore seems to have a clear preference for the understory of the Teak woodlands. However, a major part of these woodlands is burned yearly in the dry season and the habitat becomes only restored at the earliest one month after the first abundant rains, thus generally from late December onwards. The Teak woodlands grow on deep Kalahari sand and the soil conditions are always dry. The flush of new vegetation and foliage after heavy rains is so abundant that the woodlands in the wet season could be classified as 'moist bush and moist woodland', the habitat preferred by River Warblers as indicated by Pearson & Lack (1992). The habitat in the Teak woodlands also conforms to the predictions of what the wintering habitat should be by Dowsett (1972).

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